

1019 **Effective Use of Intravascular Lithotripsy with Leopard-Crawl Technique and Drug-Coated Balloon in a Heavily Calcified Left Anterior Descending Artery Lesion**

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Background

Severely calcified coronary lesions remain a significant challenge in percutaneous coronary intervention (PCI), often requiring advanced plaque modification techniques such as rotational atherectomy (ROTA) or orbital atherectomy (OAS). Intravascular lithotripsy (IVL) has emerged as a less complex alternative; however, device deliverability across tight, calcified stenoses may be limited. Additionally, the role of drug-coated balloons (DCB) in calcified de novo lesions continues to evolve.

Method

We report a case of a 60-year-old gentleman with multiple cardiovascular risk factors, including end-stage renal failure, diabetes mellitus, hypertension, and dyslipidemia, who presented with non-ST elevation myocardial infarction. Coronary angiography demonstrated a severely calcified lesion with significant stenosis in the proximal to mid left anterior descending (LAD) artery.

The lesion was crossed with a run through floppy wire; however, intravascular ultrasound (IVUS) unsuccessful due to severe calcification. A 3.0 × 12 mm IVL (Sonic Cracker) balloon was used however unable to pass through the stenotic lesion, subsequently decided to advance the IVL balloon using a leopard-crawl technique, allowing delivery of lithotripsy pulses (80 pulses) to modify the lesion. Following adequate plaque modification, IVUS assessment was performed showing cracked calcification with distal vessel reference of 3.0 mm and proximal vessel reference of 3.5 mm. Further lesion preparation was undertaken using scoring balloon 3.0/15 mm. The lesion was then treated with drug-coated balloons (DCB) 3.0/30 mm from mid to distal LAD and 3.5/30 mm from proximal to mid LAD segment.

Result

The leopard-crawl technique enabled successful delivery of the IVL balloon across the previously uncrossable lesion. A total of 80 pulses were delivered, resulting in effective calcium fracture confirmed by IVUS. Adequate luminal gain was achieved following adjunctive balloon dilatation.

Subsequent treatment with DCB resulted in an excellent angiographic outcome, with TIMI 3 flow and no evidence of dissection or recoil.

Conclusion

This case highlights several important clinical insights:

- 1.IVL system is effective in modifying heavily calcified coronary lesions, even in challenging anatomy.
- 2.In situations where the IVL balloon cannot initially cross the lesion, the leopard-crawl technique represents a practical and effective strategy, potentially avoiding the need for atherectomy techniques such as ROTA or OAS.
- 3.DCB therapy may be a feasible treatment option in selected calcified de novo lesions following adequate lesion preparation, offering a stent-less strategy with favorable immediate results.